can be an ultrasonic tip, but, of course, the present invention is not limited to the precise mechanism of lens emulsification or disintegration, and any other technology resulting in lens or corneal destruction or modification would be appropriate, e.g., lasers. The preferred embodiment also provides a pre-formed incision in the cornea **26** to allow for the proper tension in the cornea, and to limit the opening to a specific size, 3 mm is traditional for KPE, but other opening dimensions are possible depending upon the application. For example, larger pre-formed incisions are provided to enable the simulation of a lens transplant surgical procedure. Whatever the incision length, the posterior chamber phacoemulsification technique may then be performed through the pupil **33** in the iris **29**. The outer capsular wall **51** (the anterior lens membrane) is removed and the cataract phantom **53** subsequently emulsified and removed through aspiration.

While we have disclosed exemplary structures to illustrate the principles of the present invention, it should be understood that we wish to embody within the scope of the patent warranted hereon, all such modifications as reasonably and properly come within the scope of our contribution to the art.

What is claimed:

1. A practice eye for the in vitro simulation of cataract removal by emulsification comprising:

an orb having three connected inner chambers formed therein, a first chamber lying between an iris membrane and a corneal membrane and corresponding to an anterior chamber in a human eye, a second chamber lying between said iris membrane and a posterior membrane and corresponding to a posterior chamber in a human eye, and a third chamber, separated from said second chamber by the posterior membrane and corresponding to the vitreous cavity in a human eye; and

a cataractous lens phantom releasably attached to said orb within said second chamber, the lens phantom comprising a permanent hydrogel material incorporating a water-soluble polymer encapsulated within a transparent film, with the permanent hydrogel material comprising a cross-linked gelatin, the water-soluble polymer selected from the group consisting of sodium alginate and polyethylene glycol, and said transparent film selected from the group consisting of vinyl and vinylidene chloride copolymer.

2. An improved simulated ophthalmic system for practicing surgical techniques, of the type consisting of an orb having an inner chamber and a corneal membrane sealing an aperture formed in the surface of said orb, the aperture also communicating with said chamber, wherein the improvement comprises a cataractous lens phantom releasably retained within said chamber, the lens phantom comprising a permanent hydrogel material incorporating a water-soluble polymer encapsulated within a transparent film, with the permanent hydrogel material comprising a cross-linked gelatin, the water-soluble polymer selected from the group consisting of sodium alginate and polyethylene glycol, and said transparent film selected from the group consisting of vinyl and vinylidene chloride copolymer.

3. An improved simulated ophthalmic system as described in claim **2**, and further comprising a plurality of membranes located between said corneal membrane and said chamber.

4. An improve simulated ophthalmic system as described in claim **3**, wherein said plurality of membranes comprise a first is membrane and a second posterior membrane, and wherein said cataractous lens phantom is retained between said iris membrane and said posterior membrane.

5. An improved simulated ophthalmic system as described in claim **4**, wherein said permanent hydrogel material incorporating a water soluble polymer comprises a stock solution of gelatin, an effective amount of sodium alginate and further comprises a pre-selected amount of fillers, said fillers selected from the group consisting of 50 to 200 micron-sized glass beads or 50 to 200 micronsized organic fillers of the type having solubilities of less than 5% in water.

6. An improved simulated ophthalmic system as described in claim **5**, wherein said organic filler comprises tetramethyl-1,3-cyclobutanediol-linked sodium alginate.

7. An improved simulated ophthalmic system as described in claim **4**, wherein said permanent hydrogel material incorporating a water soluble polymer comprises a stock solution of gelatin, an effective amount of polythylene glycol and further comprises a pre-selected amount of fillers, said fillers selected from the group consisting of 50 to 200 micron-sized glass beads or 50–200 micron-sized organic fillers of the type having solubilities of less than 5% in water.

8. An improved simulated ophthalmic system as described in claim **7**, wherein said organic filler comprises tetramethyl-1,3-cyclobutanediol-linked sodium alginate.

9. An improved simulated ophthalmic system for practicing surgical techniques, of the type consisting of an orb having an inner chamber and a corneal membrane sealing an aperture formed in the surface of said orb, the aperture also communicating with said chamber, wherein the improvement comprises a cataractous lens phantom releasably retained within said chamber, the lens phantom comprising a structured, water-sensitive composition enclosed by an outer capsular wall of a transparent film, with said water-sensitive composition comprising a calcium chloride, cross-linked sodium alginate.

10. A practice lens for use in training surgeons the removal of the lens in a human eye, comprising:

a synthetic lens of double convex shape formed of a material that simulates the natural lens of a human eye, said material comprising a permanent hydrogel material incorporating a water-soluble polymer, with the permanent hydrogel material comprising a cross-linked gelatin and the water-soluble polymer selected from the group consisting of sodium alginate and polyethylene glycol;

a thin synthetic capsule surrounding and supporting said synthetic lens, but permitting said synthetic lens to be repositioned by said surgeon within said capsule during said removal; and

a base supporting said capsule during said removal.

11. A practice lens as described in claim **10**, wherein said base supports said capsule by suspending said capsule from a circular perimeter.

12. A practice lens as described in claim **10**, wherein said lens is translucent.

13. A practice lens as described in claim **10**, wherein said capsule is flexible.

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